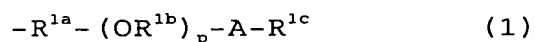


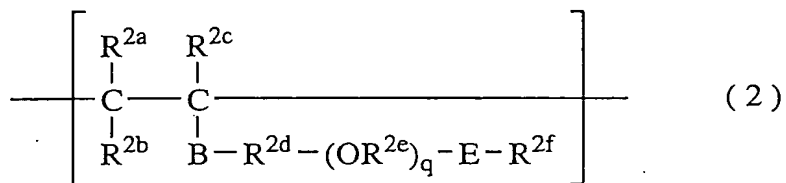
## Claims

1. An allergen-reducing agent comprising water and a water-soluble polymer compound having units having hydroxy or carboxy groups wherein at least a part of hydrogen atoms of the hydroxy or carboxy groups are substituted by groups represented by the following formula (1):



wherein  $R^{1a}$  is a C1 to C6 alkylene group which may be substituted with a hydroxy or oxo group,  $R^{1b}$  is a C1 to C6 alkylene group,  $R^{1c}$  is a group selected from the group consisting of a C4 to C30 hydrocarbon group which may be substituted with a hydroxy group, a C1 to C5 sulfoalkyl group which may be substituted with a hydroxy group, and a hydrocarbon group which has a steroid skeleton, A is a group selected from the group consisting of -O-, -OCO- and -COO-, p is 0 to 50 (average number of moles added), and  $(OR^{1b})$  moles whose number is p may be the same or different.

2. The allergen-reducing agent according to claim 1, wherein the water-soluble compound comprises monomer units (a1) and (a2) represented by the following formulae (2) and (3), respectively, a molar ratio of (a1)/(a2) is 1/1500 to 30/100 and a ratio of (a1) and (a2) in total in the molecule is 50 to 100 mol%:



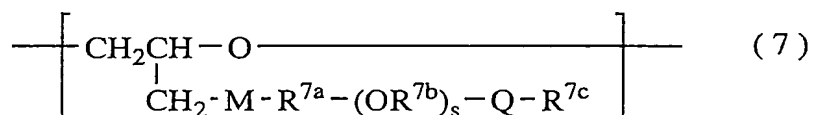
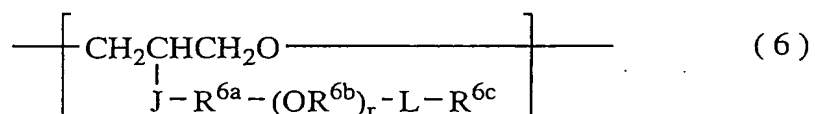
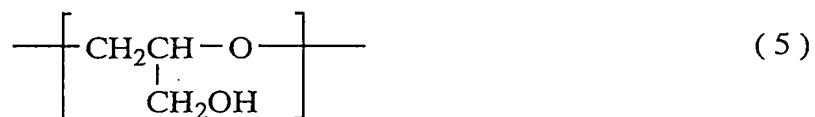
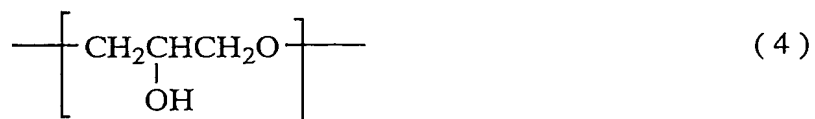
wherein  $\text{R}^{2a}$  is a hydrogen atom or a C1 to C3 alkyl group,  $\text{R}^{2b}$  is a group selected from a hydrogen atom and  $-\text{COOM}$ , M being a hydrogen atom, an alkali metal atom or an alkaline earth metal atom,  $\text{R}^{2c}$  is a group selected from a hydrogen atom, a C1 to C3 alkyl group and a hydroxy group,  $\text{R}^{2d}$  is a C1 to C6 alkylene group which may be substituted with a hydroxy group,  $\text{R}^{2e}$  is a C1 to C6 alkylene group,  $\text{R}^{2f}$  is a C4 to C30 hydrocarbon group which may be substituted with a hydroxy group, B is a group selected from  $-\text{O}-$ ,  $-\text{COO}-$ ,  $-\text{OCO}-$  and  $-\text{CONR}^{2g}-$ ,  $\text{R}^{2g}$  being a hydrogen atom, a C1 to C3 alkyl group or a C1 to C3 hydroxyalkyl group, E is a group selected from  $-\text{O}-$ ,  $-\text{OCO}-$  and  $-\text{COO}-$ , q is 0 to 50 (average number of moles added), and  $(\text{OR}^{2e})$  moles whose number is q may be the same or different;



wherein  $\text{R}^{3a}$  is a hydrogen atom or a C1 to C3 alkyl group,  $\text{R}^{3b}$  is a group selected from a hydrogen atom and  $-\text{COOM}$ , M being

a hydrogen atom, an alkali metal atom or an alkaline earth metal atom,  $R^{3c}$  is a group selected from a hydrogen atom, a C1 to C3 alkyl group and a hydroxy group, G is  $-COOM$ ,  $-OH$ ,  $-T-(R^{3d}O)_c-H$ ,  $-CON(R^{3e})(R^{3f})$ ,  $-COO-R^{3g}-N^+(R^{3h})(R^{3i})(R^{3j})\cdot X^-$ ,  $-COO-R^{3g}-N(R^{3h})(R^{3j})$ ,  $-CON(R^{3e})-R^{3g}-N^+(R^{3h})(R^{3i})(R^{3j})\cdot X^-$ ,  $-CON(R^{3e})-R^{3g}-N(R^{3h})(R^{3j})$  or a 5- or 6-membered heterocyclic group having at least one amino or amide group in the ring, M is a hydrogen atom, an alkali metal atom or an alkaline earth metal atom, T is a group selected from  $-O-$  and  $-COO-$ ,  $R^{3d}$  is a C1 to C6 alkylene group,  $R^{3e}$ ,  $R^{3f}$ ,  $R^{3h}$ ,  $R^{3i}$  and  $R^{3j}$  each represent a hydrogen atom, a C1 to C3 alkyl group or a C1 to C3 hydroxyalkyl group,  $R^{3g}$  is a C1 to C5 alkylene group,  $X^-$  represents an organic or inorganic anionic group, c is 0 to 50 (average number of moles added) and  $(R^{3d}O)$  moles whose number is c may be the same or different.

3. The allergen-reducing agent according to claim 1, wherein the water-soluble polymer compound comprises unit (a3) of the following formula (4) and/or the following formula (5) and unit (a4) of the following formula (6) and/or the following formula (7), a molar ratio of (a4)/(a3) is 1/1500 to 30/100 a ratio of (a3) and (a4) in total in the molecule is 50 to 100 mol%.



wherein J and M are a group selected from -O-, -OCO- and -COO-,  $\text{R}^{6a}$  and  $\text{R}^{7a}$  are a C1 to C6 alkylene group,  $\text{R}^{6b}$  and  $\text{R}^{7b}$  are a C1 to C6 alkylene group,  $\text{R}^{6c}$  and  $\text{R}^{7c}$  are a C4 to C30 hydrocarbon group which may be substituted with a hydroxy group, L and Q are a group selected from -O-, -OCO- and -COO-, and r and s are 0 to 50 (average number of moles added), and  $(\text{OR}^{6b})$  moles whose number is r or  $(\text{OR}^{7b})$  moles whose number is s may be the same or different.

4. An allergen-reducing agent contained in a spray container, which comprises the allergen-reducing agent of any of claims 1 to 3 introduced into a container provided with a spray device.

5. An allergen-reducing sheet comprising a flexible sheet impregnated with the allergen-reducing agent of any of claims 1 to 3.

6. A method of reducing allergen, which comprises spraying the allergen-reducing agent of any of claims 1 to 3 into space.

7. The method according to claim 6, wherein the polymer compound is cellulose, starch or a derivative thereof.

8. A method of reducing allergen, which comprises spraying or applying the allergen-reducing agent of any of claims 1 to 3 onto the surface of an object and then wiping it off with a water-absorbing article before drying.

9. A cleaning method which comprises cleaning by vacuuming or sweeping cleaning after carrying out the method of claim 7.

10. A cleaning method which comprises wiping the surface of an object with an allergen-reducing sheet having a flexible sheet impregnated with the allergen-reducing agent of any of claims 1 to 3 and cleaning by vacuuming or sweeping cleaning.

11. The method according to any of claims 8 to 10, wherein the polymer compound is cellulose, starch or a derivative thereof.